JP 2008-109660

FIG. 1

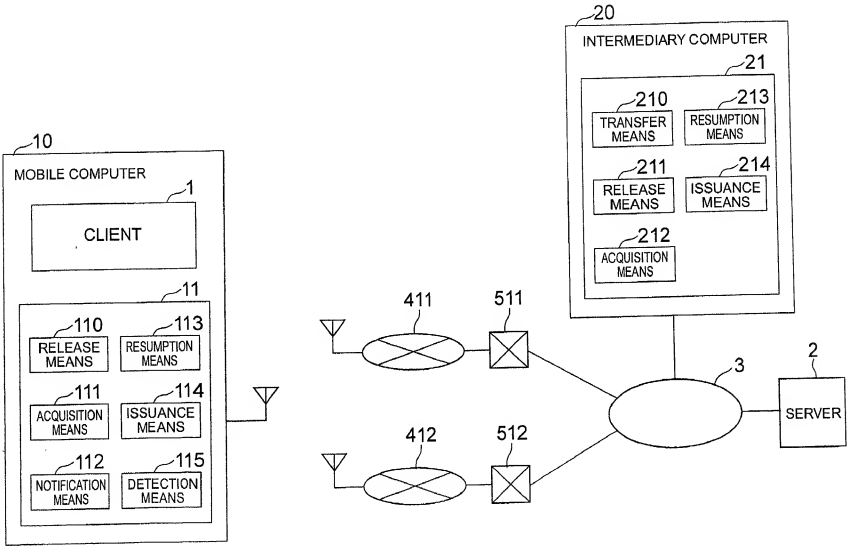

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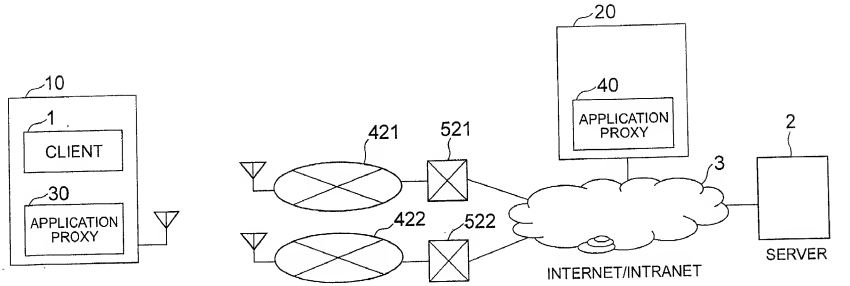
FIG. 2



TOKKYO KOHO

FIG. 3

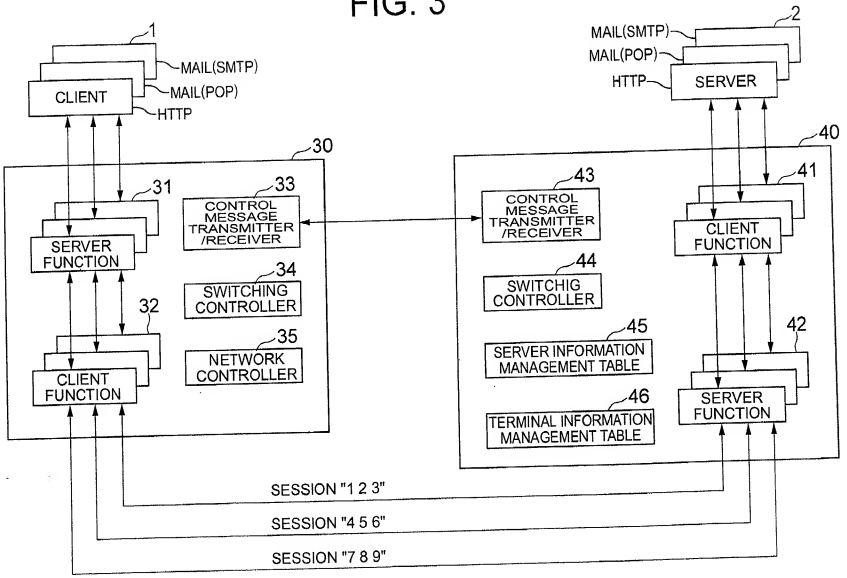


FIG. 4

	PORT NUMBER	SERVER ADDRESS	APPLICATION TYPE
	8080	192.168.5.10	WWW
	110	192.168.5.11	MAIL(POP)
	25	192.168.5.12	MAIL(SMTP)

FIG. 5

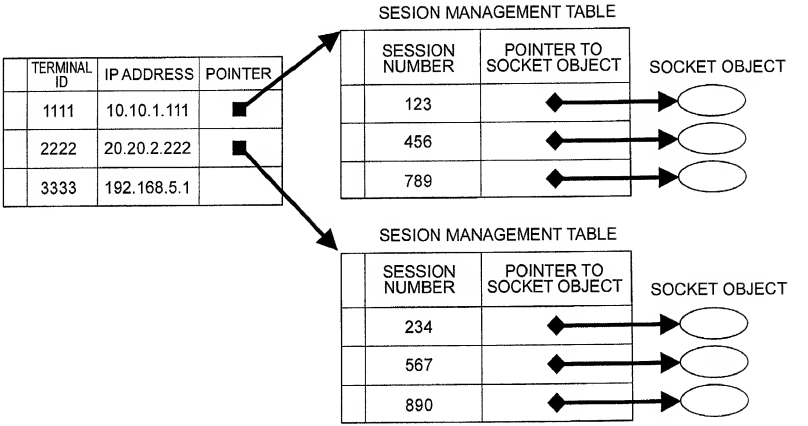

SESION MANAGEMENT TABLE
TERMINAL ID
IP ADDRESS
POINTER
1111
10.10.1.111
2222
20.20.2.222
3333
192.168.5.1
SESSION NUMBER
POINTER TO SOCKET OBJECT
SOCKET OBJECT
123
456
789
SESION MANAGEMENT TABLE
SESSION NUMBER
POINTER TO SOCKET OBJECT
SOCKET OBJECT
234
567
890

FIG. 6

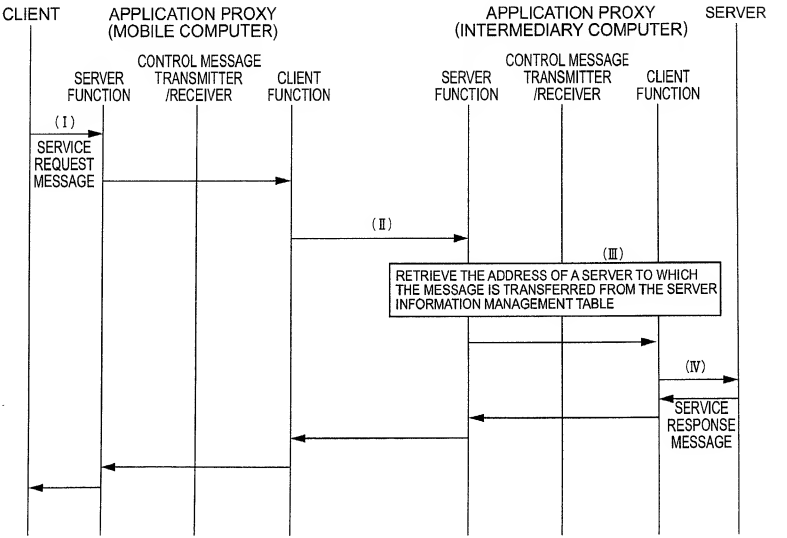

CLIENT
APPLICATION PROXY (MOBILE COMPUTER)
APPLICATION PROXY (INTERMEDIARY COMPUTER)
SERVER
SERVER FUNCTION
CONTROL MESSAGE TRANSMITTER /RECEIVER
CLIENT FUNCTION
SERVER FUNCTION
CONTROL MESSAGE TRANSMITTER /RECEIVER
CLIENT FUNCTION
(I)
SERVICE REQUEST MESSAGE
(II)
(III)
RETRIEVE THE ADDRESS OF A SERVER TO WHICH THE MESSAGE IS TRANSFERRED FROM THE SERVER INFORMATION MANAGEMENT TABLE
(IV)
SERVICE RESPONSE MESSAGE

FIG. 7

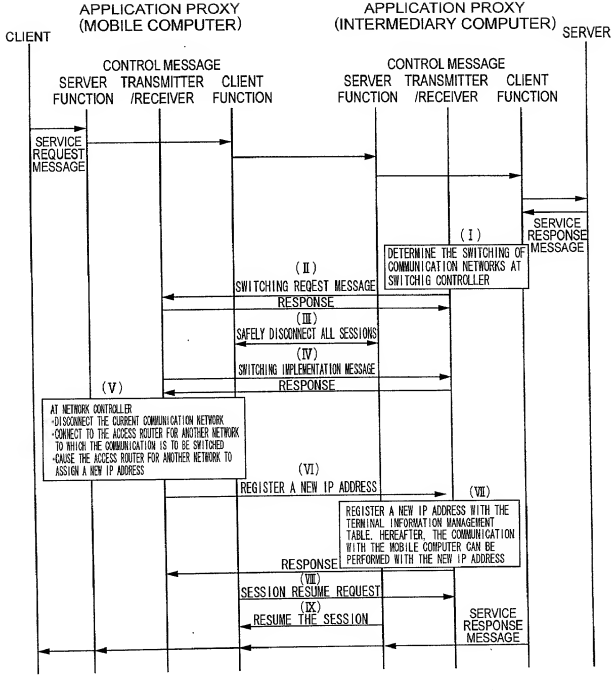

APPLICATION PROXY
(MOBILE COMPUTER)
APPLICATION PROXY
(INTERMEDIARY COMPUTER)
CLIENT
SERVER
CONTROL MESSAGE
SERVER TRANSMITTER CLIENT
FUNCTION /RECEIVER FUNCTION
CONTROL MESSAGE
SERVER TRANSMITTER CLIENT
FUNCTION /RECEIVER FUNCTION
SERVICE REQUEST MESSAGE
SERVICE RESPONSE MESSAGE
(I)
DETERMINE THE SWITCHING OF COMMUNICATION NETWORKS AT SWITCHIG CONTROLLER
(II)
SWITCHING REQEST MESSAGE
RESPONSE
(III)
SAFELY DISCONNECT ALL SESSIONS
(IV)
SWITCHING IMPLEMENTATION MESSAGE
RESPONSE
(V)
AT NETWORK CONTROLLER
-DISCONNECT THE CURRENT COMMUNICATION NETWORK
-CONNECT TO THE ACCESS ROUTER FOR ANOTHER NETWORK TO WHICH THE COMMUNICATION IS TO BE SWITCHED
-CAUSE THE ACCESS ROUTER FOR ANOTHER NETWORK TO ASSIGN A NEW IP ADDRESS
(VI)
REGISTER A NEW IP ADDRESS
(VII)
REGISTER A NEW IP ADDRESS WITH THE TERMINAL INFORMATION MANAGEMENT TABLE. HEREAFTER, THE COMMUNICATION WITH THE MOBILE COMPUTER CAN BE PERFORMED WITH THE NEW IP ADDRESS
RESPONSE
(VIII)
SESSION RESUME REQUEST
(IX)
RESUME THE SESSION
SERVICE RESPONSE MESSAGE

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FIG. 8

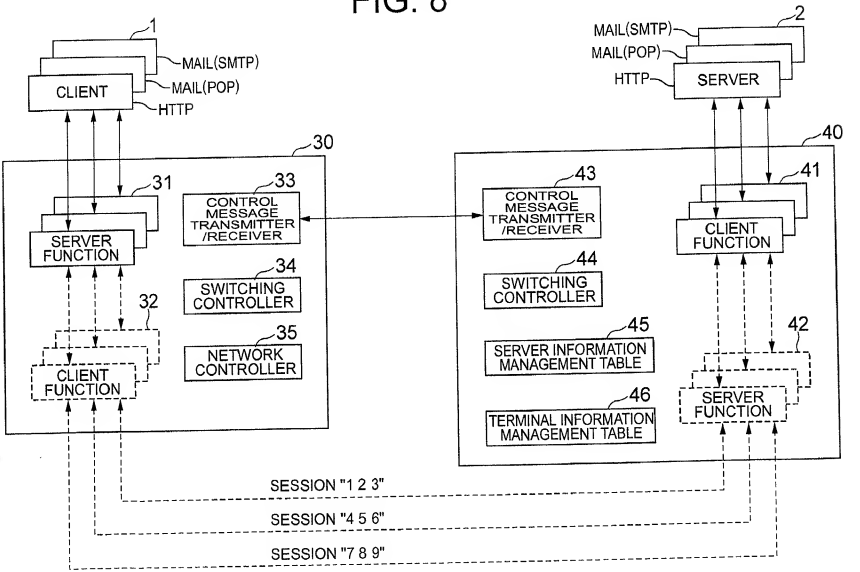


FIG. 9

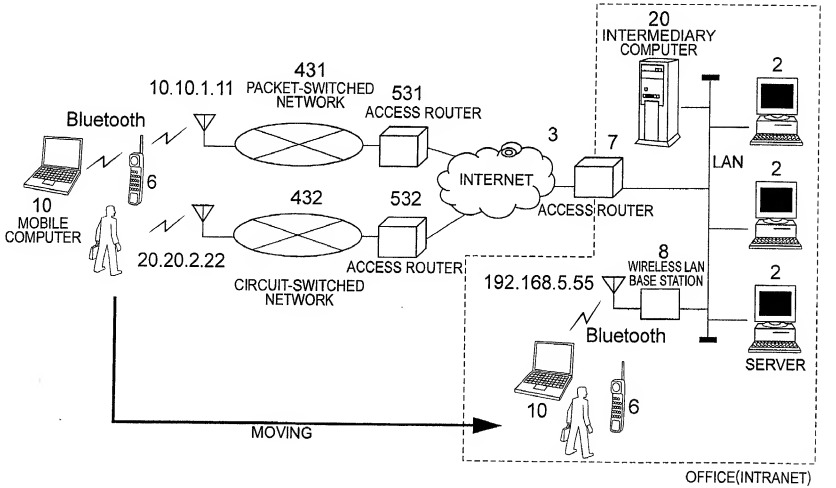

20
INTERMEDIARY COMPUTER
2
2
2
SERVER
LAN
431
10.10.1.11
PACKET-SWITCHED NETWORK
531
ACCESS ROUTER
Bluetooth
6
10
MOBILE COMPUTER
3
INTERNET
7
ACCESS ROUTER
432
532
20.20.2.22
ACCESS ROUTER
CIRCUIT-SWITCHED NETWORK
8
WIRELESS LAN BASE STATION
192.168.5.55
Bluetooth
10
6
MOVING
OFFICE(INTRANET)

FIG. 10

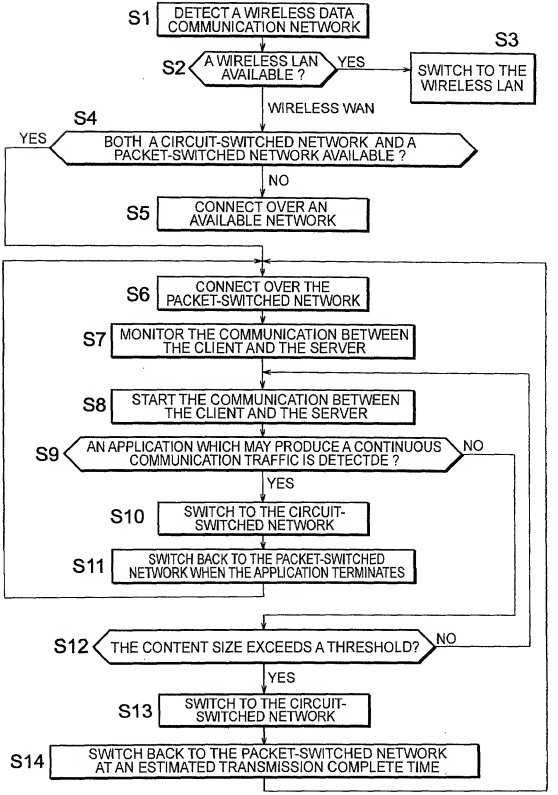
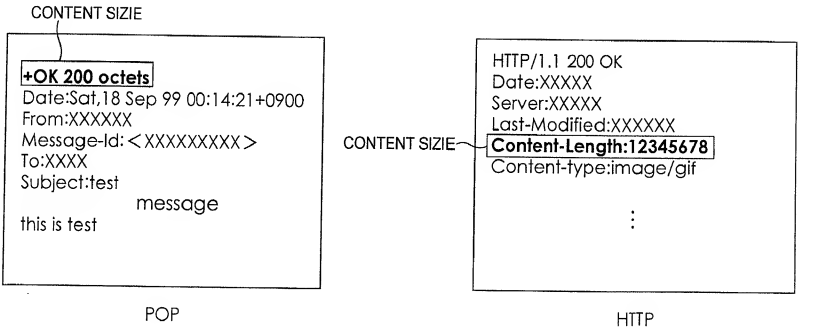
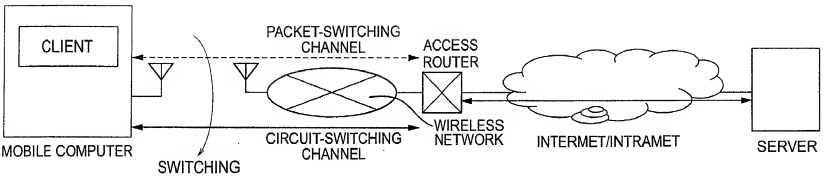

S1
DETECT A WIRELESS DATA COMMUNICATION NETWORK
S2
A WIRELESS LAN AVAILABLE ?
YES
S3
SWITCH TO THE WIRELESS LAN
WIRELESS WAN
S4
YES
BOTH A CIRCUIT-SWITCHED NETWORK AND A PACKET-SWITCHED NETWORK AVAILABLE ?
NO
S5
CONNECT OVER AN AVAILABLE NETWORK
S6
CONNECT OVER THE PACKET-SWITCHED NETWORK
S7
MONITOR THE COMMUNICATION BETWEEN THE CLIENT AND THE SERVER
S8
START THE COMMUNICATION BETWEEN THE CLIENT AND THE SERVER
S9
AN APPLICATION WHICH MAY PRODUCE A CONTINUOUS COMMUNICATION TRAFFIC IS DETECTDE ?
NO
YES
S10
SWITCH TO THE CIRCUIT-SWITCHED NETWORK
S11
SWITCH BACK TO THE PACKET-SWITCHED NETWORK WHEN THE APPLICATION TERMINATES
S12
THE CONTENT SIZE EXCEEDS A THRESHOLD?
NO
YES
S13
SWITCH TO THE CIRCUIT-SWITCHED NETWORK
S14
SWITCH BACK TO THE PACKET-SWITCHED NETWORK AT AN ESTIMATED TRANSMISSION COMPLETE TIME

FIG. 11


CONTENT SIZIE
+OK 200 octets
Date:Sat,18 Sep 99 00:14:21+0900
From:XXXXXX
Message-Id: <XXXXXXXXX>
To:XXXX
Subject:test
message
this is test
POP
CONTENT SIZIE
HTTP/1.1 200 OK
Date:XXXXX
Server:XXXXX
Last-Modified:XXXXXX
Content-Length:12345678
Content-type:image/gif
HTTP

TOH260 10H09660

FIG. 12



TO:2607101109660

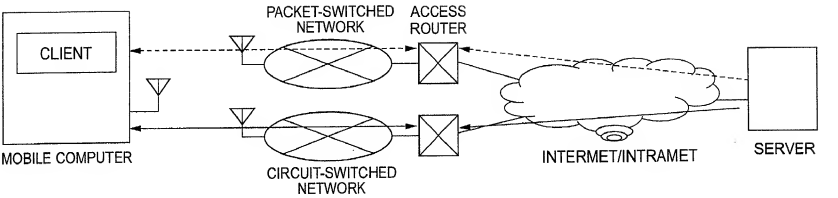



FIG. 13